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MARKET REPORT

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The Key Profitability Levers in Online Grocery

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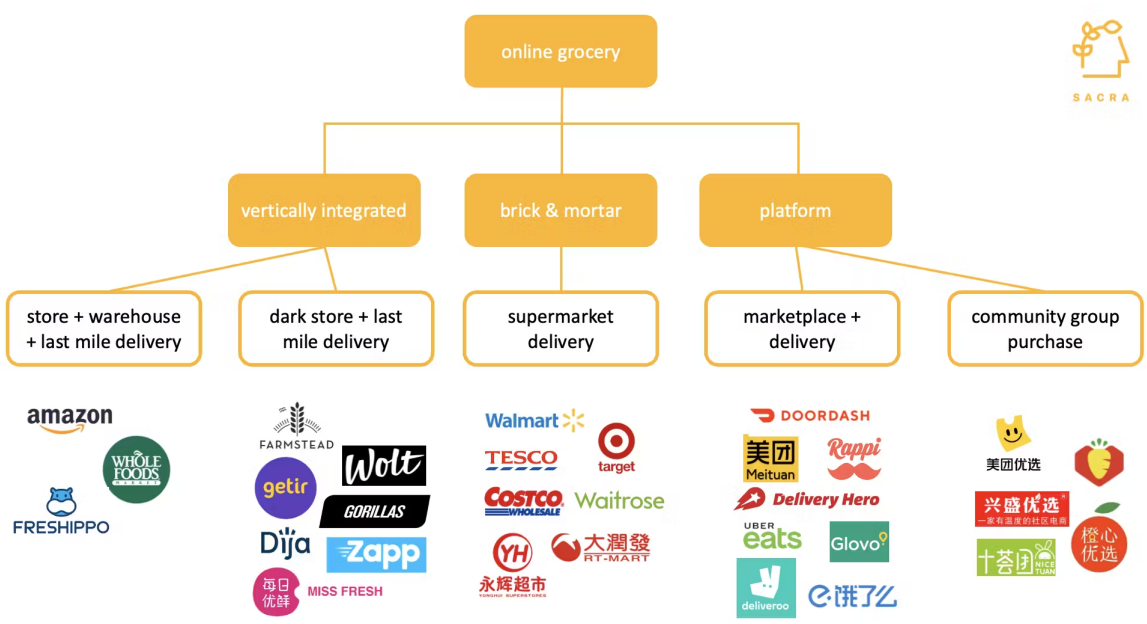
The Key Profitability Levers in Online Grocery

By **Nan Wang**



The last e-commerce battleground

Strict requirements for cold chain logistics, food spoilage and a lack of standardization have historically constrained how much grocery can move online. Nevertheless, increasing focus and firepower have been dedicated to this space over the last year due to COVID tailwinds, changing consumer purchasing habits, and the search for high-frequency categories for traffic generation.

Globally, there are 4,000 companies that offer food and grocery delivery. In the first half of 2021, more than 170 companies in this category raised financing rounds, surpassing $20B in funding. Out of the $20B, almost $3B was raised between GoPuff, Getir, Wolt, Weee!, and Gorillas. Two leading dark store operators in China, MissFresh and Dingdong Maicai, have both filed with SEC for IPO later this year.

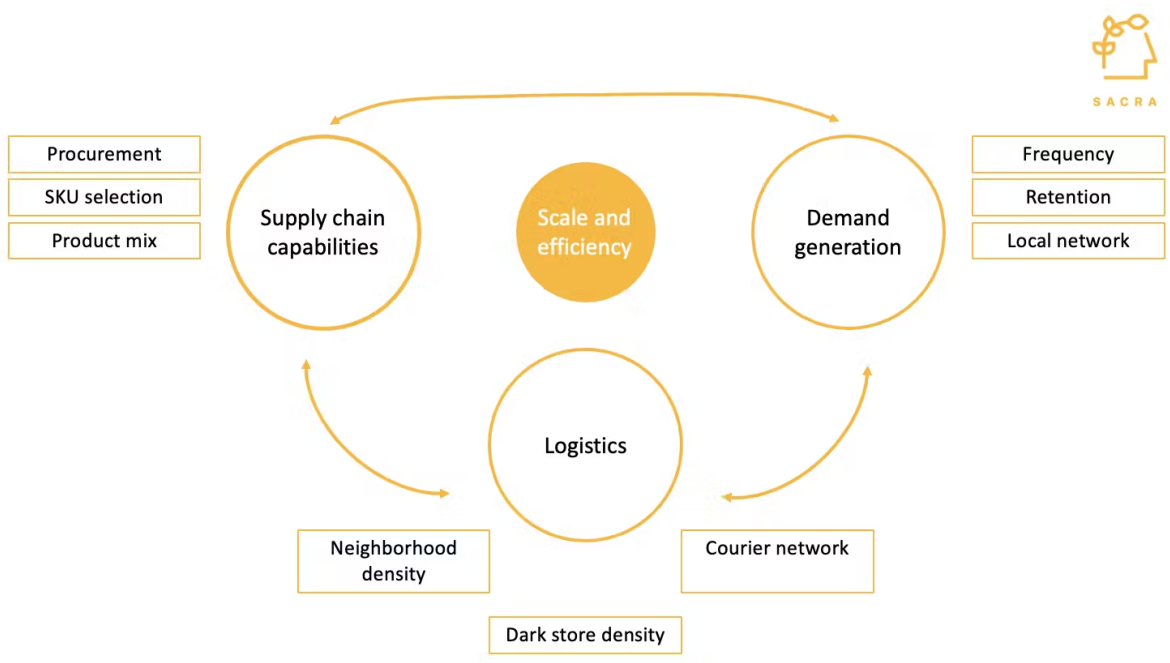
In this memo, we look at unit economics across different business models and determine the key profitability levers in this hyper-competitive and fast-growing sector.

Online grocery falls into two broad categories: platform models and vertically integrated models. Platform models include:

- Third-party marketplaces that connect demand and supply. These platforms also provide last-mile delivery but hold no inventory on its balance sheet. Market leaders include Doordash and Uber Eats in the US, Meituan in China and Rappi in LatAm.
- Community group purchase (“CGP”) is an emerging business model which has gained popularity in China. CGP pays the community group leaders an 8 - 10% commission for their effort to promote products within WeChat groups. Effectively, this arrangement tilts CAC more into a variable cost. Also, CGP is able to eliminate some distributor markups and crowdsources last-mile delivery.

Vertically integrated models include:

- Omnichannel delivery and dark stores, where companies can move further upstream, procure supply, rent warehouses and manage inventory, as well as fulfill last-mile delivery. This mode of operation is more capital intensive than platform models. However, by being more vertically integrated, companies can have more room for cost optimization.
- Supermarket delivery also falls into this category. However, the cost structure is constrained by existing logistics chains and higher labor costs.



The early-stage online grocery businesses are mostly loss-making due to high capex and low leverage on fixed costs. We believe the core of a successful online grocery business is

scale and efficiency. The north star is cost optimization through supply chain management and demand generation:

- **Supply chain management**: Using direct procurement to cut distribution costs and improve gross margin
- **Demand generation**: Optimizing product mix to generate demand and gain scale; have the capability to increase basket size through SKU selection and cross-sell, thereby, reducing delivery cost per order

Business models determine the cost structure and have a direct impact on profitability. We summarize the strengths and challenges of each business model below.

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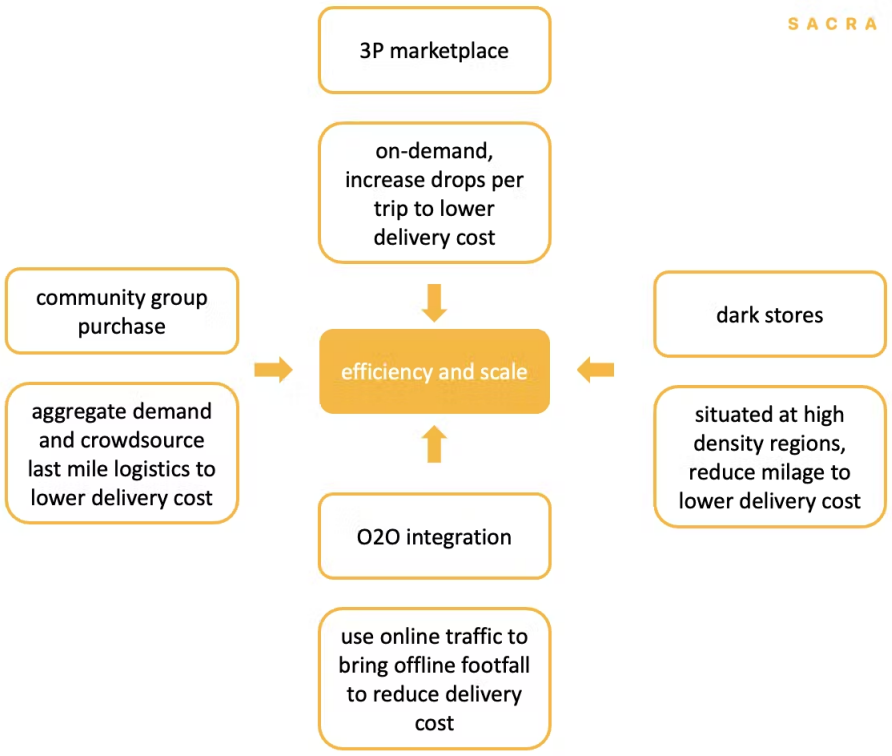
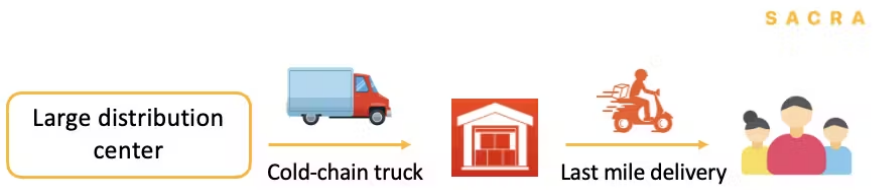
	Strengths	Challenges	Leading operators
Dark store	Warehouses are close to consumers to enable ultra-fast delivery	Capital intensive, high labor and delivery costs with lower AOV per order	getir, Dija, Zapp, goPuff, GORILLAS, 每日优鲜 MISS FRESH, 叮咚买菜
	Potential to cut away multiple layers of distribution to improve supply chain efficiency	High marketing spends to attract customers and limited customer loyalty	
Marketplace	Demand generation, data aggregator with network effect	Does not disrupt the supermarket supply chain but merely connects merchants to online traffic via O2O	DOORDASH, UBER eats, Rappi, 美团 Meituan, deliveroo, 饿了么, Glovo, Delivery Hero
	Opportunity to cross-sell to higher-margin verticals	Point-to-point drops per hour are typically lower than hub-and-spoke models	
	Asset light (no physical asset or inventory risk)	Require a minimum level of liquidity on both the demand (orders) and supply-side (merchants and couriers)	
Community group purchase	From supply-push to demand-pull: zero inventory risk and low spoilage because orders are placed before shipment	Community leaders have no loyalty to platform and high churn risk	美团优选, 兴盛优选 一家有温度的社区电商, 十荟团 NICE TUAN, 橙心优选
	By crowdsource last-mile logistics, CGP can break even with low AOV	Require more planning and coordination than on-demand purchases	



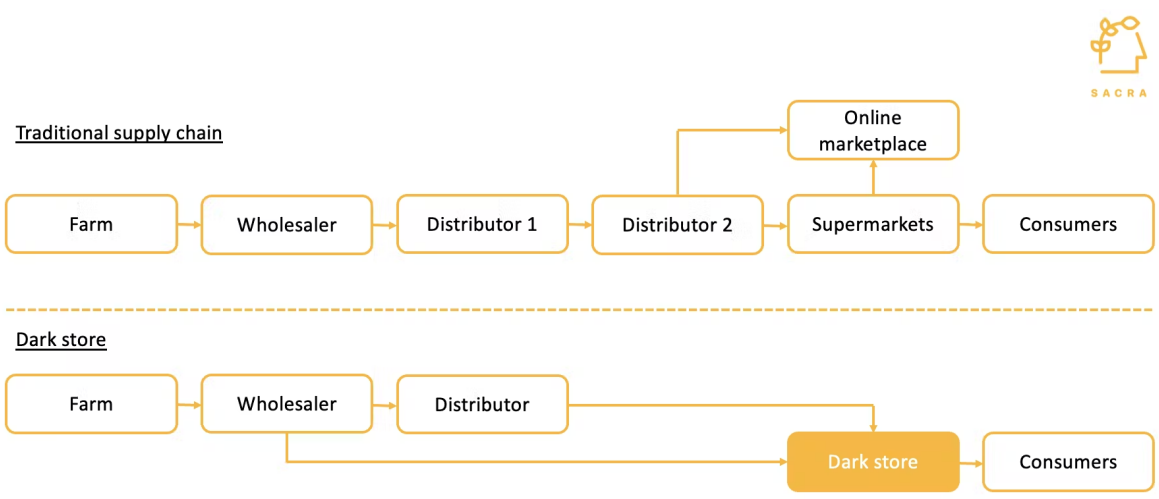
Efficiency improvement and scale are key to optimize cost structure. Operators aim to lower delivery costs through various business models.

Dark stores

Dark stores operate warehouses in dense neighborhoods and are close to consumers to enable fast delivery.



Getir claims they can complete 6 drops per hour. This is higher than our estimation of 2x/hr for Deliveroo (point to point model), 4x/hr for Domino's (hub and spoke model) and 5x/hr for Farmstead (pre-order).



To optimize the cost structure, dark store operators potentially cut away multiple layers of distribution through direct procurement. This would increase supply chain efficiency and improve gross margin because every layer of distribution charges a ~20% mark-up.

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	Dark store	Drivers
AOV (£)	25	AOV is the most important driver to increase unit economics in the dark store model. A higher AOVs can spread out the cost of last-mile delivery.
Spoilage	2 - 5%	Lower spoilage due to either higher non-perishables in the product mix, or faster stock rotation from better demand generation.
Gross margin	30%	Gross margin can be improved from more direct procurement.
Operating expense		
Labor cost	7%	Labor for picking and packing products.
Marketing	5%	Online marketing, but likely to be higher at the beginning.
Fulfillment cost	18%	Hub and spoke model can stack orders. No. of drops per hour should be higher than point-to-point delivery model. However, fulfillment accounts for a high portion of the fixed cost.
Contribution margin	**0%**	

Our primary research shows that the most effective and direct way for dark stores to achieve profitability is to increase average order value ("AOV"). This is because a higher order volume does not reduce labor or delivery costs, which are more or less fixed on a per order basis. When AOV increases, gross profit is higher to cover operating expense, leaving a disproportional benefit to contribution margin.

We illustrate this with an order economics analysis below. Keeping all other variables unchanged, when AOV increases from £10 to £25 and £50, labor and delivery costs as a percentage of AOV reduces from ~40% to 8-17%. As a result, the contribution margin increases from -12% to 13-22%. The pre-tax profit per store also increases from -£20.7K per month to £50-160K per month.

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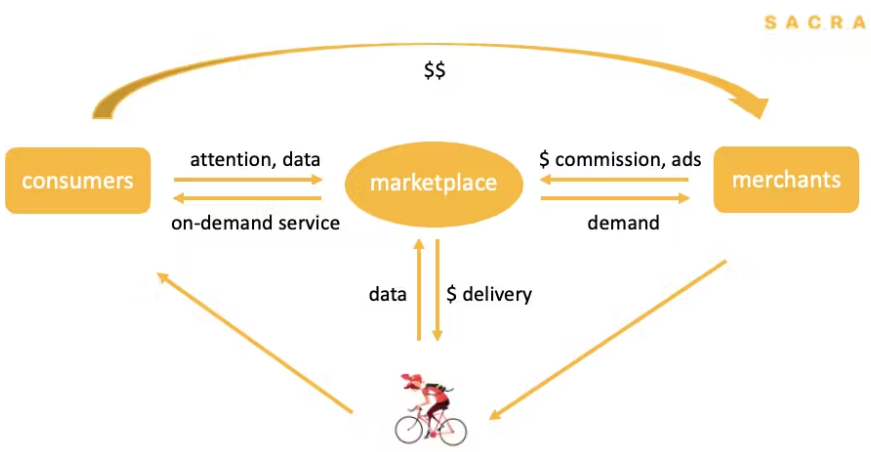
Scenario	Low AOV	Average AOV	High AOV
AOV	**10**	**25**	**50**
no. of orders per day	500	500	500
dark store area (sqm)	300	300	300
gross margin	30%	30%	30%
sales per day	5,000	12,500	25,000
sales per month	150,000	375,000	750,000
gross profit per month	45,000	112,500	225,000
gross profit per order	3.0	7.5	15.0
workers per dark store	10	10	10
wage per day	80	80	80
pick & pack per order	1.7	1.7	1.7
% of AOV	17%	7%	3%
no. of drops per hour	4	4	4
couriers wage per hour	10	10	10
last mile delivery per order	2.5	2.5	2.5
% of AOV	25%	10%	5%
fulfillment cost per order	4.2	4.2	4.2
contribution margin per order	(1.2)	3.3	10.8
contribution margin	-11.7%	13.3%	21.7%
rent per sqm per day	0.3	0.3	0.3
lease per month	2,700	2,700	2,700
bills	500	500	500
% increase in AOV		150%	100%
% increase in net income		386%	225%
pre tax profit per dark store per month	(20,700)	46,800	159,300
pre tax profit margin	-13.8%	12.5%	21.2%

The most effective and direct way to achieve profitability is to increase the average basket size.

Since most of the labor and delivery costs cannot be reduced with a higher order volume, e.g. pick & pack cost is constant at £1.7 per order, a higher order volume without any increase in AOV would risk the business making losses at a faster pace.

Marketplaces with on-demand delivery

Marketplaces connect merchants to online traffic. To ensure a better user experience, many marketplaces offer on-demand delivery services.



Due to strong network effects and effective field sales teams to secure supply, marketplaces tend to stabilize into a duopoly market structure and can become strong demand generation engines.

The weakness of the marketplace model is that it is not vertically integrated and therefore has fewer opportunities to work directly with suppliers. We see marketplace players expand into other business models, such as Meituan, Rappi and Deliveroo running dark kitchens, as well as, Doordash forming partnerships with Farmstead.

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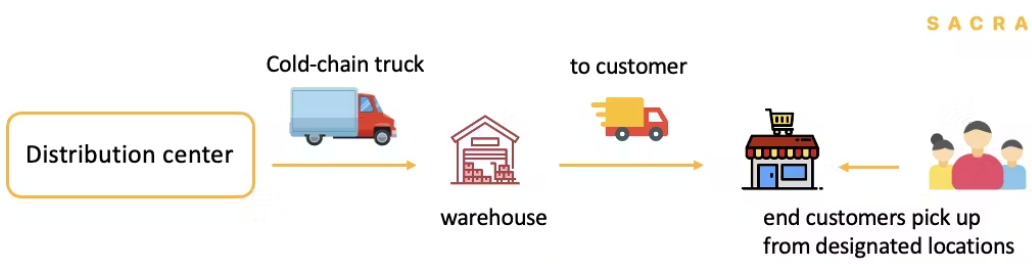
	2 drops per trip	3 drops per trip	4 drops per trip
AOV (£)	20	20	20
Commission	4	4	4
Commission as % of AOV	20%	20%	20%
Consumer fees	2	2	2
Gross revenue	6	6	6
Refund	-0.3	-0.3	-0.3
Net revenue	5.7	5.7	5.7
Delivery cost	4	3.3	2.5
Delivery cost as % of AOV	20%	17%	13%
Gross profit	1.7	2.4	3.2
Gross profit as % of AOV	9%	12%	16%

The most important unit economics driver for marketplaces is the number of drops per trip. A higher number of drops per trip can spread out the delivery cost per order. This efficiency improvement is typically a result of better recommendation and route optimization. Marketplaces would then lower how much they pay to the couriers on a per-trip basis. Couriers would earn more on an hourly basis, but the lion's share of the additional gain would accrue to the marketplaces.

Community group purchasing

Community group purchasing (“CGP”) is the fastest-growing model in China since the COVID pandemic. Consumers in the same neighborhood would order groceries via WeChat mini-programs for next-day delivery to local group leaders or to designated self-pickup points.



Orders are aggregated in the neighborhood by a group leader via WeChat group chats or mini-programs. Consumers self-pickup orders the next day at designated locations.

Internet giants such as Meituan, Pinduoduo and Didi are expanding aggressively into this space. Private players include Xingsheng Youxuan, backed by Tencent and Shihuituan, backed by Alibaba.

	CGP	Drivers
AOV (RMB)	25	Lower AOV than other models. CGP gained traction in lower-tier cities, where consumers are attracted by value for money.
Spoilage	1%	Since demand is aggregated in advance, spoilage is reduced from excess supply. CGP also source from upsteam wholesales, cutting costs associated with multiple layers of distribution mark-ups.
Gross margin	20%	
Operating expense		
Commission to group leaders	8%	Commission paid to group leaders has decreased from high teens to high single digits percentages. Multi-homing is common among group leaders.
Rent	0%	No physical location is required because offline convenience stores also serve as pick up locations.
Marketing	1%	
Fulfillment cost	5%	No last mile delivery cost as orders are self picked up.
Contribution margin	**6%**	CGP model can break-even despite lower AOV.

We think a structural advantage of the community group purchase model is that it crowdsources last-mile logistics, therefore, significantly lowers the delivery cost per order. In addition, by paying the group leader an 8-10% commission, CAC becomes more of a variable cost, making the model less capital intensive.